DREW™ DPA-MI MINI INDICATOR

DESCRIPTION

The DREW DPA-MI Mini Indicator offers marine engineers the simplest way to obtain diesel engine cylinder pressure measurements, and calculate engine operating parameters for balancing and optimizing engine load. Suitable for use with all two-stroke and four-stroke engines equipped with indicator valves, the DREW DPA-MI Mini Indicator can measure up to 18 engines and store essential engine performance data.

FEATURES

With only two buttons, the portable metal handheld unit houses a robust, stand-alone monitoring system with a built-in processor and non-volatile memory for storing essential engine measurements. The first button powers the unit on and off, and it also selects the mode of operation between cylinder and engine selection modes. The second button allows the operator to select the next engine or cylinder to be measured. A built-in test feature utilizes both buttons to begin a basic diagnostics mode for troubleshooting purposes.

The DREW DPA-MI Mini Indicator contains a simple 4-digit LED display that identifies the engine selected and maximum cylinder pressure obtained during measurement. Other information that is displayed includes RPM, optional measurement settings, and diagnostic codes used during troubleshooting mode. At its most basic function, the unit can serve as a maximeter to determine maximum cylinder pressure. However, the majority of the analysis is done with the included File Viewer software package.

DPA-MI Mini Indicator

Pre-loaded in the handheld unit memory, the File Viewer automatically installs itself on any Windows-based PC once the custom USB cable is connected. The custom USB cable is used to transfer and archive engine measurements from the

FEATURES

- 4-digit LED display
- Auto-detect RPM and TDC to 0.1 degree
- Standard 2xR6(AA) batteries, rechargeable via USB
- Utilizes Kistler sensor technology
- Built-in non-volatile memory and USB port
- DPA File Viewer and USB cable included
- Optional TDC sensors
- Built in test mode

BENEFITS

- Immediate results for in-situ engine tuning
- Uncomplicated engine configuration and analysis capability
- Long use time—up to 10 hours operation between charges
- Reliable and accurate engine readings
- Excellent retention of engine configuration and measurement data
- Auto-installation of DPA File Viewer from memory
- Measures up to 18 engines with 125 total cylinder measurements
- Easy measurement record transfer to PC

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handheld unit to the PC, and toupload engine configuration information to the handheld unit prior to measurement. The File Viewer allows the operator to analyze engine performance through the combination of graphs, diagrams, and a table of results calculated from the engine measurement data. Customizable deviation limits allows centralized engine performance goal setting for sister ships with the same engines so they can achieve similar operational conditions.

APPLICATIONS

The DREW DPA-MI Mini Indicator is available with three different TDC sensors: Optical sensors for temporary or portable installation, and inductive or magnetic sensors for fixed installations. TDC sensor kits provide additional measurement data to accurately determine crankshaft angle down to 0.1 degree. This option allows operators to precisely balance engine load in order to increase engine efficiency, to extend engine component life and to reduce fuel consumption and exhaust emissions.

To ensure sufficient data points required for proper crankshaft angle determination, it is recommended that a fixed TDC sensor kit is selected for the measurement of slow-speed, two-stroke engines. Although optional for four-stroke engines, the use of a fixed or portable TDC sensor kit is advisable when the point of ignition occurs before top dead center, and the center of the compression curve cannot be automatically determined as TDC.

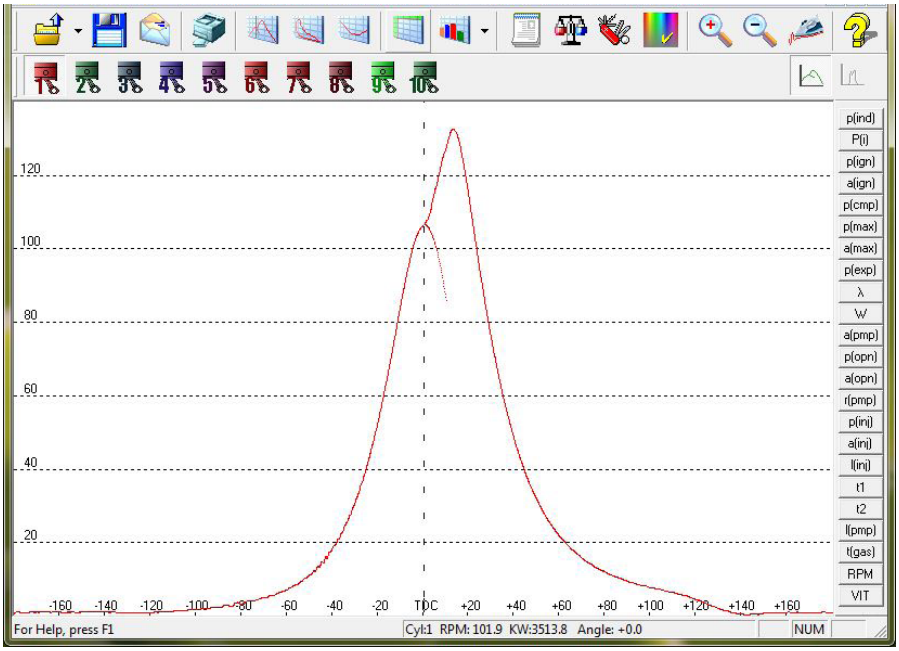
Tuning of the engine with the DREW DPA-MI Mini Indicator can reduce specific fuel oil consumption (SFOC), since each degree that ignition is retarded, SFOC will increase by approximately 2%. Furthermore, for each degree in delayed combustion, there will be an increase in exhaust gas temperature of around 8°C – 10°C, as well as, an increase in smoke, carbonaceous deposit, and particulate matter (PM) formation due to incomplete fuel combustion. The combination of monitoring and balancing engine load is essential in any modern engine condition monitoring program as it gives an opportunity for operational and in maintenance cost savings.

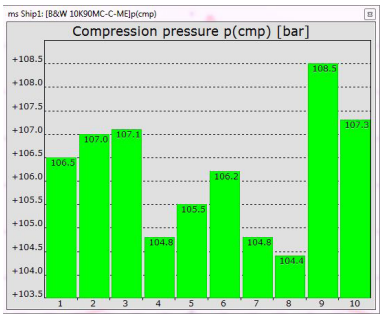
ORDERING INFORMATION

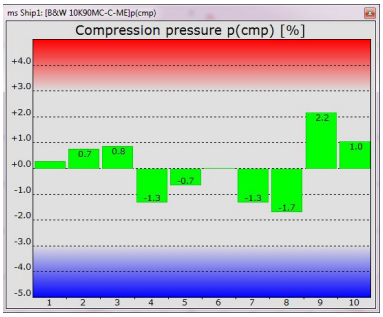
Description	PCN
DPA-MI Mini Indicator, Basic	1AB3548
DPA-MI Mini Indicator, Pre-TDC Sensor Kit	1AB3549

TDC SENSOR KIT SELECTION GUIDE

TDC Sensor Type Installation	Engine Type 2-stroke	Engine Type 4-stroke	Installation Gap (mm)
Inductive Fixed	1AB3553	1AB3551	2 to 4
Magnetic Fixed	1AB3554[1]	1AB3550	5 to 10
Optical Portable	1AB3552		50 to 300







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SPECIFICATIONS

Dimensions, mm	210x50x50
Weight, kg	0.99
Battery	2xR6 (AA) rechargeable
Battery life	10 hours (4 hours with TDC Sensor Kit)
Charging time	15 hours via standard USB port
Memory	non-volatile SRAM (20 year retention)
Engine library	18 engines
Measurement data	125 cylinders
Maximum pressure	250 bar

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Drew Marine maintains Safety Data Sheets on all of its products. These documents contain health and safety information for the development of appropriate product handling procedures to protect your employees. Safety Data Sheets should be read and understood by all of your supervisory personnel and employees before using Drew Marine products.

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